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ABSTRACT

National standards published in 1995 addressed the importance of foreign language education and identified five goal areas: communication, cultures, connections, comparisons, and communities. This study incorporated these five goals and examined the potential of electronic mail in foreign language learning. In addition, it looked at cultural aspects of computer mediated communication. Subjects were students in a fifth-semester Spanish class at a large public university in the United States. Two classes (a total of 35 students) were involved in the project. One class used e-mail to communicate with native Spanish speakers in Mexico, while the other did not use e-mail. Data collection included a close test, class writing reports, oral examinations, attitude surveys, questionnaires, and interviews. Analysis of quantitative data revealed that the students' performance and confidence did not differ significantly between the two groups. For the qualitative analysis, the content of the e-mail messages was categorized into eight topics: culture, language, course management, social activity, books, class assignments, desire to communicate, and personal sharing. Findings indicated that e-mail motivated students, helped in learning culture, enhanced social presence, and assisted foreign language learning. A follow-up study conducted 1 year after the original study revealed that one fourth of the e-mail participants continued the electronic communication after the class was completed. Appendices include the attitude survey, the Cloze Test and the questionnaire on e-mail use. (Contains 29 references.) (AEF)

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Electronic Mail in Foreign Language Learning: Communication and Culture

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Abstract

National standards published in 1995 addressed the importance of foreign language education. Five goal areas were identified: communication, cultures, connections, comparisons, and communities. This study incorporated these five goals and examined the potential of electronic mail in foreign language learning. In addition, computer mediated communication and cultural aspects were investigated.

The subjects of the study were students in the fifth-semester Spanish Conversation and Composition class at a large public university in the United States. Two classes, with a total of 35 students, were involved in the project. The students of one class (the E-Mail group) used E-Mail to communicate with native Spanish speakers in Mexico, while the students of the other class (the non-E-Mail group) did not. The E-Mail communication lasted for 10 weeks. The purpose of the study was to examine (1) whether the language performance and confidence of these two groups differed, (2) what the E-Mail messages involved, (3) what the students' attitudes toward the use of E-Mail were, and (4) what problems the students encountered during the E-Mail communication.

The data collection included a cloze test, class writing reports, oral examinations, attitude surveys, questionnaires, and interviews. Both quantitative and qualitative research methods were used to analyze the data: repeated measure, selective coding, survey design, and interview. The analysis of the quantitative data revealed that the students' performance and confidence did not differ significantly between the two groups. For the qualitative analysis, the content of the E-Mail messages were categorized into eight topics: culture, language, course management, social activity, books, class assignments, desire to communicate, and personal sharing. The findings of the analysis indicated that E-Mail motivated students, helped in learning culture, enhanced social presence, and assisted foreign language learning. The participants were in favor of the use of E-Mail.

A follow-up study was conducted one year after the study was completed. One fourth of the participants of the E-Mail group continued the E-Mail communication with their pen-pals after the study was over. One student was still writing to her Mexican pen-pals when the follow-up study was conducted. The findings indicated that the study had a positive impact on the students over time.

E-Mail could be a very useful tool for foreign language learning. It is recommended that educators integrate E-Mail into instruction. Since few studies of this kind have been conducted, more research is warranted to learn about the best use of this promising technology.

Introduction

The importance of foreign language education was addressed in national standards in 1995 (American Council on the Teaching of Foreign Languages, 1995). Computer medicated communication (CMC) technology is considered to be a good tool for foreign language learning because it enables foreign language learners to communicate directly with native speakers and to expose themselves to an authentic culture (Cohen & Riel, 1989; Cononelos & Oliva, 1993; Sayers, 1994; Knight, 1994). CMC is based on text, disregarding the lack of social cues, such as facial expressions, gestures, and smiles. Research studies on CMC indicated two opposite findings. Researchers conducting experimental studies suggested that CMC was cold, unfriendly, and impersonal because of the lack of social cues (Rice, 1984; Trevino, Lengel, & Daft, 1987; Hackman & Walker, 1990; Hiltz, Johnson, & Agle, 1978; Rice & Case, 1983; Steinfield, 1986). Therefore, CMC was not appropriate for communication and personal interaction. In contradiction, researchers conducting field studies claimed that users developed on-line community and that CMC was warm, friendly, and personal although CMC lacked social cues (Kerr & Hiltz, 1982; Hiltz & Turoff, 1978; Steinfield, 1986; Johansen, DeGrasses, & Wilson, 1978; Foulger, 1990; Gunawardena, 1995). So, CMC was suitable for personal interaction and communication.

According to Short, Williams, and Christie (1976) and Walther (1992), the fewer codes (social cues) that are available in a medium, the less attention is paid by the user to the presence of other social participants. In other words, users participating in CMC would pay little attention to their partners. Consequently, CMC messages contain little personal information, and messages are task-oriented and impersonal. The purpose of this study is to

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investigate the potential of E-Mail in foreign language learning and to examine the relationship between CMC and social presence.

Research Questions

The following five research questions were asked :

1. Does the reading, writing, and speaking performance of the students using E-Mail in class differ from the performance of those students not using E-Mail in class?
2. Does the confidence of the students using E-Mail in class differ from the confidence of those students not using E-Mail in class?
3. What does the content of the students' E-Mail messages involve?
4. What are the opinions of the students and instructor about using E-Mail in foreign language instruction?
5. What problems do students encounter during communication with their pen-pals via E-Mail?

Student Samples and their Mexican Pen-Pals

The sample for this study consisted of the students in two Spanish 313 (Spanish Conversation and Composition) classes. The students taking that course were selected because their language skills were sufficient for E-Mail communication with native speakers. In addition, they were learning language skills and culture. They were taught on the same days by the same instructor, who was a Spanish native speaker. Both classes had around 20 students. One class learned and used E-Mail during the semester, while the other class did not.

The Mexican pen-pals were 36 university students of a mathematics class in Instituto Tecnologico y de Estudios Superiores de Monterrey. Via personal contact, the professor of the mathematics class expressed his interest in the project and was willing to have his students to communicate with the U.S. students in Spanish.

Procedures

First, the researcher explained her study to the students of the two Spanish 313 classes and invited them to participate in the study. All of the students were willing to participate in the project. They filled in an attitude survey form (see Appendix A) and took a cloze test in class (see Appendix B). The students of the E-Mail group received step-by-step instructions on using E-Mail, but due to time constraints they were only taught the commands that were necessary for the study. The non-E-Mail group did not receive E-Mail training.

To encourage the students to write more, the instructor agreed to give extra points up to 10% of the total scores for participating. For the students of the E-Mail group, the extra points were based on the number of the E-Mail messages sent to the Mexican pen-pals and the amount written in the E-Mail messages. To gain extra points, the students of the E-Mail group had to send copies of their E-Mail messages to the researcher. Similarly, the students of the non-E-Mail group also received extra points if they wrote a summary of an article which they read outside of class time. Their extra points were based on the number of articles they read and the amount of summaries they wrote. To receive extra points, the students had to submit their summaries to their instructor. The instructor and the researcher together decided on number of extra points for each student.

During the beginning of the E-Mail communication, the U.S. students' letters were returned from Mexico as undeliverable mail. To continue the project, the researcher mailed the U.S. subjects' E-Mail addresses to the Mexican professor, and the Mexican students initiated writing to the U.S. subjects. The U.S. subjects communicated with the pen-pals by using the "reply" command, and the communication went smoothly. The E-Mail communication lasted for 10 weeks.

Toward the end of the semester, the students in both the E-Mail and non-E-Mail classes took the same cloze test and survey as at the beginning of the project. The E-Mail group filled in an additional questionnaire (see Appendix C) to share their opinions about using E-Mail in their learning. Afterwards, a telephone interview was conducted to clarify the responses on the questionnaire. Finally, the instructor was interviewed to share his opinions about the use of E-Mail in his class.

Data Analysis

Both quantitative and qualitative research methods were used to analyze the data. The data analysis consisted of three major parts. The first part included the use of a t-test to compare the language performance (reading, writing, and speaking) and confidence of the E-Mail group with the same characteristics of the non-E-Mail group (research questions one and two). The data were based on scores of the cloze test, papers written in class, oral

examinations, and the attitude survey. The second part involved coding and analyzing content topics in the E-Mail messages (research question three). The data were based on the E-Mail messages which were sent to the Mexican pen-pals by the U.S. students. The third part covered reviewing and analyzing the data collected from the E-Mail messages, survey questionnaires, and interviews (research questions four and five).

Results

The five research questions were about the students' language performance, confidence, E-Mail content, opinions of using E-Mail in learning, and problems encountered during the E-Mail communication.

Language Performance and Confidence

The p value in the following table indicated that no significant difference was found between the E-Mail group and the non-E-Mail group.

Table 1. Results of Language Performance and Confidence between the two Groups

Topics	Reading	Writing	Speaking	Confidence
p value	.50	.56	.76	.30

*$p > 0.05$

E-Mail Content

Table 2. The Number of E-Mail Messages and their Total Number of Words

Student	Number of E-Mail Messages	Total Number of Words
1	12	3384
2	13	1904
3	21	4230
4	7	846
5	4	635
6	0	0
7	7	846
8	16	2538
9	20	4865
10	6	1269
11	17	2115
12	6	635
13	7	1058
14	10	1269
15	12	2115
16	8	1481
17	5	635
18	0	0

The table above listed the number of each U.S. student's E-Mail messages sent to his or her Mexican pen-pals and the total number of words written in the messages. Two of the 18 students did not write E-Mail at all. Two of them sent 20 or more messages to their Mexican pen-pals and wrote more than 4,200 words during the 10-week E-Mail communication.

The content topics of the E-Mail messages included culture, language itself, desire to communicate, personal sharing, course management, social activity, books, and class assignment. "Culture" referred to all aspects

of the life of the people. It included people's customs, manners, values, and beliefs. "Language accuracy" referred to the E-Mail messages about language, for example, grammar, language use, semantics, or syntax. "Desire to communicate" referred to the E-Mail messages which expressed the desire of the U.S. students to communicate with their Mexican pen-pals. "Personal sharing" referred to the E-Mail messages which contained discussion about personal thoughts that people often prefer to share only with their friends. "Course management" was related to discussion about extra points, due date, scores, and examinations. "Social activity" was about invitations or plans for activities. For example, students used E-Mail to invite people for a party or organize a trip. "Book" listed some students' thoughts and feelings towards certain books and authors. "Class assignment" referred to the E-Mail messages that the students used to collect information which they needed for their assignment. The messages of the first four topics (culture, language accuracy, desire to communicate, and personal sharing) frequently appeared in the E-Mail messages.

Opinions on E-Mail Use

The following table summarized the attitude of the students of the E-Mail group toward using E-Mail in foreign language learning.

Table 3. Attitude of Students Toward Using E-Mail

Opinions	Mean
E-Mail has increased my motivation to continue learning Spanish.	3.44
I learned a lot from my pen pal(s).	3.50
E-Mail has increased my confidence about my Spanish ability.	3.63
E-Mail has enhanced my understanding of Spanish-speaking culture.	3.63
E-Mail has improved my ability to write in Spanish.	3.69
E-Mail has improved my ability to communicate in Spanish.	3.75
E-Mail has improved my ability to read in Spanish.	3.86
I like to communicate with Spanish native speakers via E-Mail.	4.31
E-Mail should be integrated into Spanish language instruction.	4.38
E-Mail was a positive addition to Spanish 313.	4.56

Note. The scale is from one to five with five corresponding to a student's strongest agreement with the statement.

The students rated high the statements "E-Mail was a positive addition to Spanish 313" and "E-Mail should be integrated into Spanish language instruction." They also remarked that they enjoyed the communication with Spanish native speakers very much. They rated as fairly high statements about E-Mail improving their language abilities, motivation, and confidence.

Five facts were mentioned by students to describe what they liked most about the E-Mail communication: (1) communicating with native speakers, (2) being exposed to native culture, (3) making friends, (4) practicing language, and (5) receiving responses efficiently. Four common facts were pointed out by students describing what they liked the least about the E-Mail communication: (1) unreliable system,
(2) late responses, (3) different academic majors, and (4) limited time. Not being able to write with a Spanish accent, not learning oral skills, worrying about offending pen-pals, and disliking certain characters of some of the pen-pals were also mentioned by a few students.

The instructor of the study learned E-Mail the same time as the students. However, because of his busy schedule, he could not communicate with his students via E-Mail. He mentioned that he himself had little experience in using E-Mail, but thought that E-Mail could be very useful in foreign language learning. Students could directly communicate with native speakers and discuss culture with them. He expressed that he would like to learn more about E-Mail and be familiar with it so that he could integrate it into his class in the near future.

Problems Encountered by Students

The problems included the E-Mail system, different academic training, commitment of writing, access to computers, and limited knowledge. At the beginning of the study, the undeliverable mail caused problems for the students to communicate. The students also addressed difficulties in communicating with people with different academic majors. The Mexican students were encouraged to write to the U.S. students, but they were not required to do so. Therefore, some U.S. students had problems maintaining a dialogue with their pen-pals because they did not receive responses. In addition, limited access to computers prevented some students from writing to their pen-pals more often. Some students were not familiar with the use of E-Mail when the study started. Although the researcher helped some individuals after the initial E-Mail instruction, the researcher found that the students would have been less frustrated or that considerable time would have been saved if they had had more knowledge about E-Mail.

Discussion

No Difference Was Found in Comparison

The results indicated that the foreign language learners in the E-Mail group did not perform foreign language better and did not have higher confidence than the students in the non-E-Mail group. The results of this study were consistent with other quantitative research where a significant difference in learning was not found (Mellgren, 1983; Williams, 1980; Barson, Frommer, & Schwartz, 1993; Boswell, Mocker, & Hamlin, 1968; Chu & Schramm, 1967; Chute, Bruning, & Hulick, 1984; Hoyt & Frye, 1972; Kruh, 1983; Whittington, 1987).

There is a trend to move away from comparison studies. McIsaac and Gunawardena (in press) said, "It is time, therefore, to move away from media comparison studies that often yield no significant difference." The questions that need to be asked "are not which medium works best, but rather how best to incorporate media attributes into the design of effective instruction for learning." Following this trend, the qualitative data of the present study were further analyzed. The results indicated that E-Mail could motivate students, help in learning culture, enhance social presence, and assist foreign language learning. The participants were in favor of the use of E-Mail in foreign language learning.

Motivation

E-Mail motivated students. Throughout the semester, both groups received the same encouragement to conduct the out-of-class work to gain extra points. Nevertheless, the number of the students that participated was very different between these two groups. Sixteen out of 18 students in the E-Mail group conducted the work. None of the students in the non-E-Mail group did. The current research therefore suggested that E-Mail motivated the students.

Culture

E-Mail helped in learning culture. The E-Mail messages of the students were categorized into eight topics: culture, language accuracy, course management, social activity, books, class assignment, desire to communicate, and personal sharing. Like Cononelos and Oliva (1993) and Sayers (1994), the present study suggested that E-Mail contributed to cultural exchange. In this research, many cultural aspects were mentioned and discussed in the students' E-Mail messages, including patterns of living, values, customs, beliefs, and manners.

Via E-Mail, they talked about their classes, professors, universities, families, friends, jobs, and plans for the future. They discussed their favorite music and sports. Different singers, bands, and athletes were mentioned. Reading their E-Mail messages provided one with a very vivid picture of what a U.S. college student's social life was like. Parties, "happy hour", beers, clubs, dances, and dates were favorite topics of these students. These topics led to discussions about legal drinking age, appropriate age for marriage, and roles of genders in dating. Questions such as "Do people have to reach twenty-one years old to be able to drink?", "Is a man in his early twenties too young to get married?", and "Can a woman ask a man for a date?" were asked.

The U.S. students shared how they felt about school. The majority of them mentioned a heavy workload. Some students complained how tiresome school was while others expressed enjoyment of what they were doing. They also talked about what they did on holidays, and how festivals were celebrated in their countries.

In addition, the participants discussed social, political, and economic issues in their nations. They shared what they thought of their political leaders and current economic situations in their countries. Disasters, like the bombing in Oklahoma and tornadoes and earthquakes that occurred in Mexico, caused great concern to the

participants in the E-Mail communication. For these participants, the disasters were not only social events in a nation, but also meant damage or pain to their pen-pals, who they encountered in the E-Mail communication and who they became friends with afterwards.

Social Presence

Via E-Mail, several U.S. students asked their Mexican pen-pals about the damage caused by the disasters in Mexico and expressed their deep concern. Unlike the experimental researchers' claims, the U.S. students' E-Mail contained many friendly and warm messages. Moreover, one can notice their deep friendships and warm relations from the level of intimacy in the following students' E-Mail messages.

A male student told his female pen-pal that he was very sad and confused because he wondered whether his girlfriend loved him as much as he loved her. His deep sharing moved the female pen-pal, and she told him frankly that she sometimes also had similar feeling toward her boyfriend and worried about the relationship. She suggested that he not think too much about it and encouraged him to focus on his studies. In her E-Mail messages, she wrote many meaningful statements to cheer him up.

A female student shared her own problems with her male pen-pal and asked for help. She told him that her boyfriend was young, shy, and distant from her. She was frustrated about the relationship and felt deeply hurt. The male pen-pal shared his thoughts about the relationship from a man's points of view and gave her advice. In addition, several male students expressed how they felt when they were rejected by women and hoped to get support from each other. All the sharing mentioned above was very personal, and the E-Mail messages contained high levels of intimacy.

According to Short et al. (1976) and Walther (1992), the fewer codes that are available in a medium, the less attention is paid by the user to the presence of other social participants. This statement was inconsistent with the finding of the current study. Although E-Mail consists of few codes, the participants in the present study were willing to share deep and personal feelings with their pen-pals and received much attention from their partners. Their candid sharing caused their pen-pals to be open and share more about themselves. For example, the female pen-pal mentioned above, frankly told her pen-pal that she was deeply moved by his sharing and that she actually had the same worry as he did.

Friendships between the U.S. students and the Mexican participants of the present study developed during the 10-week E-Mail communication. At the end of the semester, several U.S. students asked their pen-pals to continue exchanging messages via E-Mail. During the interview, the majority of the U.S. subjects said that they would like to continue the E-Mail communication with their pen-pals even though the research was over. Some of them stressed that they definitely would continue writing to their pen-pals. Towards the end of the semester, one of the students had been discussing via E-Mail with her pen-pals about meeting each other in Mexico.

Foreign Language Learning

E-Mail assisted foreign language learning. The participants of the current study discussed language use with their pen-pals. Many E-Mail messages of the U.S. students in this research were concerned with the Spanish language. Some of the U.S. students asked their pen-pals to correct their errors, including spelling and grammar, which appeared in their E-Mail messages. They also asked questions about Spanish slang and colloquial expressions.

Several U.S. students stated that the language which their Mexican pen-pals used in E-Mail was different from the language which appeared in their textbooks or was used in their class. The language they learned in class was very formal. By communicating with their Mexican pen-pals, they were exposed to authentic Spanish. The students expressed that this exposure helped them to use Spanish in a natural way. Moreover, writing to native speakers helped them to recognize whether or not native speakers comprehended their Spanish. If their pen-pals understood them, they felt more confident about their language ability than before.

Use of E-Mail

The participants were in favor of the use of E-Mail. Some students in the present study had good experience in the communication with their pen-pals. They had similar interests as their pen-pals, and they had many topics to talk about. They frequently exchanged E-Mail with their pen-pals and received replies quickly. Some students did not have such a good experience. They seldom received their pen-pals' responses and did not have much to talk about with their pen-pals.

No matter whether the students' personal E-Mail experiences were good or not, the majority of the students thought that E-Mail was a positive addition to Spanish 313 and suggested that E-Mail should be integrated into foreign language instruction. The students in the present research enjoyed using E-Mail.

The responses of the participants indicated that users were in favor of using E-Mail and they thought that E-Mail would be beneficial for foreign language learning. It enabled the students to receive feedback from native speakers within a short time. Direct communication with native speakers allowed them to expose themselves to authentic language and foreign culture. The participants (the instructor and the students) of the present study suggested foreign language instructors to integrate E-Mail into foreign language instruction.

Suggestions for Professional Practice

The following suggestions are for professionals who are interested in integrating computer-mediated communication (CMC) technologies, especially E-Mail, into instruction and who are considering conducting a project in which students communicate with learners of another country. Based on the present study, the suggestions are geared toward foreign language instructors, but they can be easily applied to instructors teaching culture, international relations, international business, and other related fields.

The majority of the U.S. participants of the present study were not familiar with the use of E-Mail. The researcher found that the students would have been less frustrated or that considerable time would have been saved if they had had more knowledge about E-Mail use. Therefore, prior to starting a project, instructors should spend enough time on students' E-Mail training.

The power of E-Mail lies in the opportunity for the user to inexpensively communicate with people in different countries within a short time. The user can communicate with a native speaker and expose himself to an authentic culture. This is why E-Mail could be a useful tool for foreign language learners. Since students can directly communicate with people in another country, instructors should teach the students to be open and sensitive toward the other culture. They also ought to guide the students to learn about the culture of their pen-pals and to avoid stereotypes so that there are no misunderstandings or hurt feelings.

In addition, educators need to instruct students to express themselves appropriately and respectfully. They should help the students to understand and appreciate the opportunity to communicate with their pen-pals, especially with native speakers in a target language. It could happen that some pen-pals do not reply to the students' E-Mail. The instructors should guide the students to properly express their hope to their pen-pals and to be patient. Of course, the instructor should also make arrangements for students whose pen-pals do not reply. Pushy and impolite statements should definitely be discouraged. Instructors should also be concerned about the E-Mail messages between the students and their pen-pals and should discourage the students from improper writing.

Although some participants of the study addressed problems of having pen-pals with different academic majors, the researcher thought that communication between people with different majors could be interesting and rich. People with dissimilar academic training sometimes view things differently. Participants could expose themselves to viewpoints which are different from theirs. Of course, communicating with the students with very different majors requires the instructor to provide the students with good guidance.

Currently, more science students than humanities students use E-Mail or technology in their fields. A humanities instructor therefore should be aware that it might be more difficult for him to find pen-pals with humanities majors than pen-pals with science majors to communicate with his students. The instructor also should be aware of the strengths and weaknesses of having humanities students communicate with pen-pals with science majors. The instructor should inform students ahead of time and prepare them for problems of communicating with the students with very different majors.

If one uses E-Mail in class, integration of the technology into instruction is essential. An instructor must integrate technology into instruction, rather than just use it in class. The integration requires a good course design. The instructor should prepare the participants for the communication with their pen-pals at the beginning of the project. Providing the participants with appropriate questions to get to know their pen-pals is one way of making initial communication smooth. Another way is to collect enough background information of the pen-pals so that the participants can select their own pen-pals. Some other issues, such as respecting pen-pals' culture, avoiding stereotypes, and following the etiquette of writing E-Mail messages, also need to be addressed with students.

Once communication with pen-pals starts, guided questions which are related to content topics in class can be provided for the students to post to their pen-pals. For example, family structure might be one of the topics covered in a textbook and in class. The instructor should provide the students with questions such as "Who do you live with?"; "When do people leave their parents to live by themselves?"; "Do people live with parents after they get

married?"; and "How do people feel when they move out of their parents' house and live alone?" The instructor could prepare the questions or brainstorm the questions with the students in class.

The instructor should encourage the students to find out if the answers of their pen-pals agree with what they learn in class. The content to be examined could include cultural aspects, language use, and other related topics. The instructor could ask the students to judge whether the culture described in their pen-pals' E-Mail messages differs from what is mentioned in class. The instructor could also invite the students to compare their pen-pals' writing with the writing in the textbooks. The educator should ask the students to present the information either by writing or orally. The instructor should allow enough time for students to share what they think of their pen-pals' feedback and discuss agreement as well as disagreement in class.

Since the project includes two nations, instructors at both sides of the project should be aware of how good the technical systems are in both countries. The technology is not as sophisticated in some countries as in others. The technical problems could cause delay of communication, even failure of communication; therefore the instructors should cooperate with each other to solve problems caused by technical systems. The present study could not have been completed without the assistance of the Mexican professor to solve problems. The instructors should inform the students about the possibility of technical problems ahead of time so that the students would not be too frustrated when problems do occur.

In addition, the two instructors should work closely to solve communication problems among students. Some communication problems might be caused by limited technology, but some problems might be caused by individuals. For example, if a student does not receive a pen-pal's reply, the server might be the problem. It might also be that the pen-pal was sick, that the pen-pal had dropped the class, or that simply the pen-pal was not interested in writing E-Mail. The instructors play an important role as mediators to provide students with accurate information about a pen-pal's status and to assist E-Mail communication by either discussing the problem with the other instructor or changing the pen-pal.

The instructor should also be aware that some students might select a pen-pal with a different gender or ask for changing a pen-pal with an intention of having a cyberspace date. The instructor should help the students to move their attention away from cyberspace romance and to focus on learning. As we mentioned, the instructor should be concerned about the students' E-Mail messages. Once the instructor notices inappropriate or sexual remarks in the students' messages, the instructor should step in to guide students.

An instructor being involved in this kind of project is strongly suggested to learn the use of E-Mail. To solve the problems mentioned above requires an instructor's ability to use E-Mail, unless the instructor has an assistant to take care of the problems. The instructor should communicate with the students via E-Mail because E-Mail might change the relationship between the instructor and the students. Currently, software allowing foreign characters in E-Mail is available. The instructor could use the software so that foreign language students have no problems to write foreign characters.

The Follow-Up Study

The follow-up study was conducted one year after the present study. E-Mail was sent to each of the 18 students (the E-Mail group) who participated in the research. The students were asked to answer the following questions: (1) "Did you continue writing to your pen-pals after the research project stopped?";
(2) "Are you still communicating with your pen-pals via E-Mail?"; and (3) "How does the project affect you today?". Four students answered the questions by E-Mail. Ten students answered the same questions through the phone, and four students could not be located.

One third (four students) of the participants involved in the follow-up study said that they have continued writing to their pen-pals after the project was over. The communication lasted for a few weeks for two of the students and lasted for three months for one student. The fourth student was still communicating with her pen-pal. Other students did not continue writing to their pen-pals because they were too busy to write or because their pen-pals did not reply.

All of the students responded that using E-Mail in foreign language learning was a great idea and should be integrated into instruction. Several students said that the project had positively affected them. Three students described exactly how the project influenced them.

One of the students mentioned that although his experience with his pen-pals in Spanish 313 was "short lived", the project has motivated him to make friends with people in Brazil and has helped him to "remain in touch with the culture there." Another student stated that his pen-pals in Spanish 313 were not "very responsive." However, he has found other pen-pals and wrote to them weekly. He said, "Your study got me interested in writing

to people, and I have found several lists of Spanish pen-pals on the Internet." Another student mentioned that she was helping her daughter's school to connect with people in Mexico. She wanted to utilize E-Mail as the study did.

Conclusion

Few studies have been conducted on E-Mail and foreign language learning. The present research was one of the few studies to investigate the impact of E-Mail on foreign language learning in which the foreign language learners communicated with native speakers in the target language for a long period of time. Both quantitative and qualitative data were collected for the current research.

The results of the quantitative data indicated that the students who used E-Mail and the students who did not use E-Mail did not significantly differ in their language performance and confidence. According to the analysis of the qualitative data, E-Mail was found to be able to motivate students, help in learning culture, enhance social presence, and assist foreign language learning. The results also showed that both the instructor and the students were in favor of the use of E-Mail. Therefore, E-Mail could be a very useful tool for foreign language learning.

During the study, technical and communication problems occurred. Fortunately, the problems were overcome, and the study was successfully conducted. It is suggested that instructors prepare students for E-Mail communication before the project started. They should teach the students to be open toward cultures and avoid stereotypes. E-Mail etiquette should be taught. Moreover, integration is an essential issue. It is strongly recommended that professionals integrate E-Mail into instruction, rather than just use it in class. A good course design is necessary for the integration.

The present study was well perceived by the participants. The results of the study indicated that E-Mail may be beneficial for foreign language learning. The findings of the follow-up study indicated that the research project had a positive impact on the students over time. It is recommended that researchers expand the present study to further investigate the role of E-Mail in the relationship between instructor and students, re-examine the impact of E-Mail on foreign language learning or other settings, and investigate the relationship between CMC and social presence.

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Appendix A
Attitude Survey

Name: _____ ID#: _____

Answer with one of the following: (1) Strongly disagree, (2) Somewhat disagree, (3) Neutral, (4) Somewhat agree, (5) Strongly agree.

_____ 1. I feel confident speaking Spanish in my class.
_____ 2. I feel confident about having casual conversations with native Spanish speakers in Spanish.
_____ 3. I feel confident about having an academic discussion (i.e., culture, politics) with native Spanish speakers in Spanish.
_____ 4. I feel confident about having written communicati- :ith native Spanish speakers in Spanish.
_____ 5. My Spanish is good enough to travel around Spanish-speaking countries.
_____ 6. My Spanish is good enough to study in Spanish-speaking countries.
_____ 7. My understanding of the life style in Spanish-speaking countries is good.
_____ 8. My understanding of values in Spanish-speaking countries is good.
_____ 9. I learn foreign language, especially Spanish, fast and well.
_____ 10. I am a good language learner in general.

Appendix B
Cloze Test

From the answer key below, select the word that best fits the text and write the letter next to the corresponding number.

(A) fiestas	(B) padres	(C) países	(D) y	(E) se	(F) en
(G) agruparse	(H) familia	(I) los	(J) también	(K) con	(L) públicos
(M) diferentes	(N) de	(O) la	(P) una	(Q) es	

Un gran número de acontecimientos sociales son de tipo familiar. En los días de fiesta y los domingos las familias frecuentemente se reúnen en la casa de alguien o bien, en un restaurante de tipo familiar. Estas fiestas familiares se caracterizan por la presencia de los niños y los abuelos.

Algo que atrae la atención __1__ los norteamericanos cuando visitan los __2__ hispánicos es la presencia de __3__ niños en casi todas las __4__. Ellos están acostumbrados a participar __5__ los adultos en las fiestas __6__ en otros acontecimientos, como bodas __7__ bautismos. Desde muy pequeños, participan __8__ la vida social de la __9__. Así aprenden continuamente cómo comportarse __10__ sociedad. Están acostumbrados a tratar __11__ personas de diferentes edades—abuelos, __12__ y hermanos mayores—, desarrollando así __13__ actitud de respeto que mantienen __14__ cuando son adultos. En lugares __15__, como el cine o los bailes, __16__ ven grupos de personas de __17__ edades. Hay menos tendencia a __18__ según la edad, como en __19__ sociedad norteamericana. Por eso, también __20__ menos molesto llevar a la mamá o al hermano menor cuando dos jóvenes van al cine.

1. _____	2. _____	3. _____	4. _____	5. _____
6. _____	7. _____	8. _____	9. _____	10. _____
11. _____	12. _____	13. _____	14. _____	15. _____
16. _____	17. _____	18. _____	19. _____	20. _____

Appendix C
Questionnaire on E-Mail Use

Name: _____ ID#: _____

Please answer the following questions frankly; this is confidential. Answer with one of the following: (1) Strongly disagree, (2) Somewhat disagree, (3) Neutral, (4) Somewhat agree, (5) Strongly agree.

_____ 1. E-Mail has improved my ability to write in Spanish.
_____ 2. E-Mail has improved my ability to read in Spanish.
_____ 3. E-Mail has improved my ability to communicate in Spanish.
_____ 4. E-Mail has enhanced my understanding of Spanish-speaking culture.
_____ 5. E-Mail has increased my confidence about my Spanish ability.
_____ 6. E-Mail has increased my motivation to continue learning Spanish.
_____ 7. I learned a lot from my pen pal(s).
_____ 8. I like to communicate with Spanish native speakers via E-Mail.
_____ 9. E-Mail was a positive addition to Spanish 313.
_____ 10. E-Mail should be integrated into Spanish language instruction.

What did you like the most about E-Mail?

What did you like the least?

How do you think the use of E-Mail in your class could be improved?